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Atty. Docket No.: P67777US0

REMARKS

The Office Action mailed July 27, 2004, has been carefully reviewed and Applicant notes with appreciation the identification of allowed subject matter.

By this Amendment, claim 19 has been amended. Claims 8-27 are pending in the application. Claims 8 and 19 are independent.

The Examiner objected to the drawings as failing to show a workable pump mechanism that pumps liquid to the interface between an outer sleeve and an inner shaft upon relative rotation of the sleeve and shaft.

As set forth in the specification on page 4, U.S. Patent No. 5,069,320 to Falk (the "'320 patent") has been incorporated by reference into the present application. In accordance with MPEP 608.01(p), essential as well as non-essential material may be incorporated by reference to an issued U.S. Patent such that the material being incorporated by reference does not need to be restated in the referencing application.

By this Amendment, Applicant has clarified those portions of the referenced '320 patent which specifically describe the pump mechanism (see the amendments to page 4 of the specification). As described, this pump mechanism acts to pump liquid to the interface

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between two parts in response to relative rotation therebetween, and thus illustrates a pump mechanism such as that recited in claims 8 and 19 as claimed herein. Accordingly, Applicant submits that amendment of the drawings is not required and respectfully requests favorable reconsideration and withdrawal of the objection to the drawings.

The Examiner objected to the disclosure with reference to page 3, lines 23 and following. While page 3 has been deleted herein, with only a few non-substantive changes this text has concurrently been added to the detailed description portion of the specification.

The language in question is that which states that "the sleeve is able in principle to rotate free from contact with the plasticized surface layer subsequent to relative rotation between the sleeve and the shaft". The Examiner has interpreted this to mean "that under certain unspecified conditions the sleeve 20 can rotate relative to the surface layer 50 without the sleeve rotating relative to the shaft 10." This interpretation is not correct.

According to the torque-limiting coupling device of the present invention, a shaft 10 with an outer surface layer 50 thereon is frictionally engaged with an outer sleeve 20 for transmission of torque up to a preset limit. When that limit is

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exceeded, the outer sleeve 20 rotates relative to the shaft 10 and its outer layer 50. In response to this rotation, a pump mechanism pumps liquid to the interface between the surface layer 50 and the inner surface of the sleeve 20 to reduce the friction resulting from the relative rotation. In the event insufficient liquid is provided, the outer surface layer 50, which has a lower plasticizing limit than that of the inner surface of the sleeve, will plasticize due to the friction caused by the relative rotation. With this plasticization, sufficient space is created between the two interfacing surfaces to allow the sleeve 20 to rotate *free from contact* with the plasticized surface layer 50.

The portion of the specification being objected to specifically provides that rotation of the sleeve 20 relative to the shaft 10 occurs due to excess torque, not as the result of some "unspecified condition". The plasticization does not create the relative rotation, but allows the sleeve to rotate *free from contact* with the shaft after relative rotation and the friction resulting therefrom has occurred. Once the sleeve 20, through plasticization of the outer surface layer 50, rotates *free from contact* therewith, such sleeve, of course, also rotates *free from contact* with the underlying shaft 10 bearing the outer surface layer 50, and to Applicant's reading, there is nothing to suggest

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otherwise from the specification text. With this restatement of what is taught in the specification, Applicant requests that the Examiner reconsider the text at issue and withdraw the objection.

The Examiner objected to the specification as failing to comply with 37 C.F.R. 1.71 and 1.75(d)(1) because the antecedent basis for some of the claimed subject matter appears in portions of the specification other than the detailed description.

By this Amendment, Applicant has moved the text originally appearing on pages 3 and 4 of the specification under the "Summary of the Invention" heading, to page 4 under the "Detailed Description of the Preferred Embodiments" heading. Withdrawal of the objection is requested.

The Examiner rejected claims 19-27 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner stated that there was no written description supporting the limitations in claim 19, lines 18 and following: "said outer surface layer undergoing plasticization to allow said sleeve to rotate free from contact with said shaft in the event said pump mechanism pumps insufficient liquid to said interface".

Applicant has herein amended the specification at pages 5 and 6 to set forth in a single statement the function being

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claimed which is set forth throughout the specification. Contrary to the Examiner's discounting of the prior art discussion, this discussion identifies the problem being solved, namely the significant damage that can occur to driving and driven equipment, such as a shaft and overlying sleeve, when excess torque causes relative rotation between such equipment that can destroy either or both of the interfacing surfaces. The prior art reliance on pump mechanisms to solve the problem through the supply of lubricant between the interfacing surfaces is subject to the possibility of pump malfunction. The present invention solves the problem which arises when such pump malfunction occurs, through plasticization of the outer layer of the shaft which allows the sleeve to rotate without contacting the shaft. With the summarization of this function as set forth in the amendments to pages 5 and 6 of the specification, Applicant requests the Examiner's reconsideration of what is fairly set forth in the written description as originally filed, and withdrawal of the rejection under 35 U.S.C. 112, first paragraph.

The Examiner rejected claims 19-27 under 35 U.S.C. 112, second paragraph, as being indefinite. Specifically, the Examiner expressed uncertainty as to the scope of claim 19.

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By this Amendment, Applicant has amended claim 19 to clarify the relationship between the relative rotation and the plasticization. As set forth therein and already explained above, the pump mechanism pumps liquid to the interface between the outer surface layer of the shaft and the sleeve in response to the sleeve rotating relative to the shaft. In the event of insufficient liquid being provided to the interface, the outer surface layer undergoes plasticization *due to the relative rotation between the sleeve and the shaft*. This plasticization then allows the sleeve to rotate free from contact with the shaft. The plasticization does not cause the relative rotation; rather, it is the result of the relative rotation which has been produced by excess torque. What the plasticization allows is not the relative rotation *per se*, but rotation of the sleeve *free from contact with the shaft*.

For at least the foregoing reasons, claims 19-27 are presented as being in condition for allowance and withdrawal of the rejections thereof is requested.

Claims 8-18 are allowed.

With the foregoing amendments and remarks, the Examiner's objections to the specification and drawings have been overcome and Applicant submits that the application is in condition for allowance.

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Should the Examiner have any questions or comments, the Examiner is cordially invited to telephone the undersigned attorney so that the present application can receive an early Notice of Allowance.

Respectfully submitted,
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